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10/743,550	12/23/2003	Charles A. Shaffer	005272.00006	5794

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EXAMINER	
FISCHER, JUSTIN R	
ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/743,550	SHAFFER, CHARLES A.	
	Examiner	Art Unit	
	Justin R. Fischer	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 9-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 7, 9, 18, 20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi (JP 57058501, of record) in view of Ahmad (US 3,866,652, of record). Kikuchi teaches a tire construction in which the tire cavity is entirely filled with a solution of liquid polyurethane and rubber powder or core bits (Abstract and Page 2 of attached translation). In this instance, the above noted mixture is poured into the tire cavity. While Kikuchi fails to suggest pumping the mixture into the tire cavity, it is well known to fill a tire cavity (with a particle reinforced mixture) via a pump and valve assembly, as shown for example by Ahmad (Column 3, Lines 45-65). One of ordinary skill in the art at the time of the invention would have found it obvious to pump the mixture of Kikuchi into the tire cavity, as opposed to pouring, since it represents an alternative technique that is well recognized in the tire industry. It is additionally noted that applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed method.

Regarding claim 7, the above noted liquid polyurethane is seen to constitute a flatproofing material in an analogous manner to the claimed invention.

As to claim 9, the cavity of Kikuchi is entirely filled with said solution.

With respect to claim 18, any initial amount of polyurethane can be viewed as a "first amount" and the remainder can be viewed as an "additional amount".

3. Claims 2, 10-12, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi and Ahmad as applied in claim 1 above and further in view of Staten (US 1,097,824, of record). As noted in the previous paragraph, Kikuchi substantially teaches the claimed method, including the filling of a tire cavity with a solution of polyurethane and rubber powder. While Kikuchi fails to expressly teach a grinding step to form the rubber powder, it is well recognized that rubber powder is obtained by grinding/comminuting waste rubber. As to the waste rubber, one of ordinary skill in the art at the time of the invention would have found it obvious to use any waste rubber in the method of Kikuchi. Staten is applied to evidence the art recognized use of old or discarded vehicle tires and the components therein (e.g. tire cores) in the manufacture of filled tires (Page 1, Lines 90-100).

With respect to claims 10-12, while the reference is silent as to the weight amount of each component, one of ordinary skill in the art at the time of the invention would have found it obvious to choose an assembly in which the rubber bits are the predominant component as they provide the primary reinforcement against puncture- in this instance, the liquid polyurethane has the function of acting as a carrier and providing a connection or attachment between adjacent core bits. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the assembly of liquid polyurethane and rubber powder in accordance to the limitations of the claimed invention. Staten is

additionally applied to evidence a similar tire construction in which the core material is predominantly formed of comminuted particles.

4. Claims 4 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi and Ahmad as applied in claim 1 above and further in view of Leblanc (US 4,378,749, of record). As depicted in Figure 2, Kikuchi appears to be directed to a filled, tubeless tire. While the reference fails to expressly depict or describe a tubed tire construction, such a construction is extremely well known and conventionally used in the manufacture of a wide variety of tires. Furthermore, it is well known to manufacture filled tires with either of the above noted constructions, as shown for example by Leblanc (Figures 2 and 4). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to form a tubed tire with the method of Kikuchi.

5. Claims 5, 6,13-15, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi and Ahmad as applied in claim 1 above and further in view of Panaroni (US 5,524,405, of record). As noted above, Kikuchi teaches a cavity filling material comprising polyurethane. While the reference fails to expressly describe the components of polyurethane, it is extremely well known that polyurethane is formed by adding a polyisocyanates and a polyol. Furthermore, the specific use of toluene diisocyanate would have been obvious since it represents one of the common polyisocyanates used in the production of polyurethane, as shown for example by Panaroni (Column 5, Lines 5-20).

In regards to claims 13-15, as noted above, Kikuchi discloses the use of rubber powder, which is recognized as being formed by cutting or comminuting rubber articles.

While the reference fails to expressly suggest a particle size, one of ordinary skill in the art at the time of the invention would have found it obvious to use the claimed particle sizes since said sizes are consistent with comminuted rubber particles used in a wide variety of industries, as shown for example by Panaroni (Column 3, Lines 5-20). It is further noted that the particle size would be a function of the specific tire being manufactured and the intended use of the tire. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the comminuted rubber particles or rubber powder of Kikuchi with a particle size in accordance to the limitations of the claimed invention. With respect to claim 19, the "distinct compositions" of the claim appear to be referring to a polyisocyanates and a polyol, which, as noted above, represent the common components of polyurethane.

6. Claims 16 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi and Ahmad as applied in claim 1 above and further in view of either one of Gohlisch (US 5,362,001, of record) or Allard (US 5,120,767, of record). As previously noted, Kikuchi discloses a method in which liquid polyurethane and rubber powder (core bits) are introduced into a tire cavity to form a safety tire. In this instance, it is well recognized that rubber powder is obtained by grinding/comminuting waste rubber. While the reference fails to describe the use of a first and second grinder, it is extremely well known to use multiple grinders/comminuting machines in order to provide an even distribution of particles at a desired size (facilitates working with coarse and fine particles). For example, Gohlisch (Abstract and Figure 4) and Allard (Abstract)

represent similar methods of grinding/comminuting waste rubber in which multiple grinders are provided. Absent any conclusive showing of unexpected results, one of ordinary skill would have found it obvious to use a first and second grinder in the method of Kikuchi.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi, Ahmad, and Leblanc as applied in claim 20 above and further in view of Panaroni. Kikuchi discloses the use of rubber powder, which is recognized as being formed by cutting or comminuting rubber articles. While the reference fails to expressly suggest a particle size, one of ordinary skill in the art at the time of the invention would have found it obvious to use the claimed particle sizes since said sizes are consistent with comminuted rubber particles used in a wide variety of industries, as shown for example by Panaroni (Column 3, Lines 5-20). It is further noted that the particle size would be a function of the specific tire being manufactured and the intended use of the tire. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the comminuted rubber particles or rubber powder of Kikuchi with a particle size in accordance to the limitations of the claimed invention.

Response to Arguments

8. Applicant's arguments filed November 4, 2005 have been fully considered but they are not persuasive. Applicant's primary argument is directed to the method by which the polyurethane/core bit mixture is introduced into the tire cavity. In particular, applicant contends that (a) the method of Kikuchi involves a pouring technique and (b)

Ahmad merely discusses pumping a solution of hollow spheres and an elastomeric material.

First, it is agreed that Kikuchi teaches a method in which a polyurethane reinforced composition (combination of rubber powder or ground rubber and polyurethane) is poured into the tire cavity. However, the reference in now way teaches that the method of Kikuchi can only be practiced by pouring the composition into the tire cavity. As evidenced by Ahmad, additional introduction techniques, such as pumping, are known in the tire industry for similar polyurethane reinforced compositions. It is emphasized that the composition of Ahmad comprises polyurethane and a reinforcement in the form of hollow spheres and thus, it is very similar to the polyurethane reinforced composition of Kikuchi. Thus, the tire industry recognized the ability to pump a polyurethane reinforced composition into a tire cavity- one of ordinary skill in the art at the time of the invention would have found it obvious to pump the polyurethane reinforced composition of Kikuchi into the tire cavity as it represents a suitable introduction technique in the tire industry. As to Kikuchi, the reference teaches that the mixture is agitated to obtain a desired specific gravity- there is nothing to suggest that such a composition would be incapable of being pumped into the tire cavity (appears that the above noted mixing is associated with the pouring technique).

As to claim 19, it appears that applicant is arguing that the language "distinct compositions" is intended to refer to a first and a second polyurethane. If such an embodiment is desired, it is suggested that the claim be amended to require the inclusion of a first and second liquid polyurethane. As currently drafted, the individual

components of a single polyurethane can be viewed as "distinct compositions". It is additionally noted, though, that one of ordinary skill in the art at the time of the invention would have found it obvious to mix two distinct polyurethanes to form the liquid polyurethane in Kikuchi, there being no conclusive showing of unexpected results to establish a criticality for such a method. It is emphasized that the use of a single polyurethane or multiple polyurethanes to define the liquid polyurethane is seen to be well within the purview of one of ordinary skill in the art at the time of the invention.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Justin Fischer

November 21, 2005